



TEACHER GUIDE

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STUDENT HANDOUTS

• Reading Comprehension	
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EASY MARKING™ ANSWER KEY

22

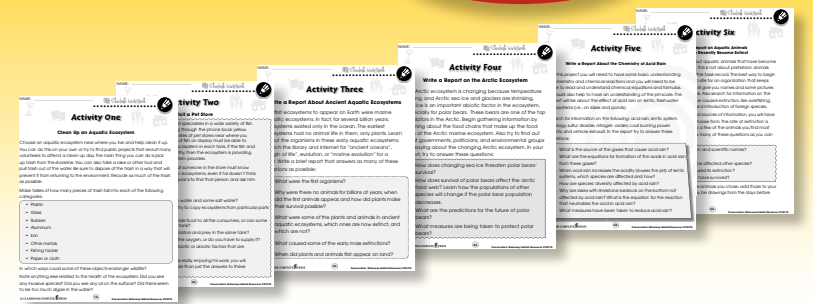
MINI POSTERS

24

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- Enter pass code CC5775D for Activity Pages





Where Are Aquatic Ecosystems?

1. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

- a) Plants produce the oxygen needed by animals for survival.
TRUE FALSE
- b) Most animals are able to perform photosynthesis.
TRUE FALSE
- c) Some lakes contain salt water.
TRUE FALSE
- d) Plants have the role of producers in an ecosystem.
TRUE FALSE
- e) The source of a river is called an estuary.
TRUE FALSE

2. Put a check mark (✓) next to the answer that is most correct.

a) The products of photosynthesis are:

- A oxygen and carbon dioxide
- B carbon dioxide and water
- C water and sugar
- D sugar and oxygen

b) A plant adapted to live in a large lake is most likely to also survive in a:

- A river
- B spring
- C small pond
- D large ocean

c) What type of organism are algae?

- A fish
- B insects
- C plants
- D viruses



Where Are Aquatic Ecosystems?

Aquatic ecosystems were the first ecosystems on Earth. These first ecosystems developed in the ocean several billion years before land ecosystems appeared. These early marine ecosystems were made up only of plants that could use **photosynthesis** to harness energy directly from the sun.



Oxygen gas is one of the products of photosynthesis. When early marine plants had added enough oxygen to the atmosphere, Earth's oceans could support both plant and animal life. This shows how the parts of an ecosystem fit together. Plants get energy from the sun and transfer it to animals. Plants also provide the oxygen that animals need. When animals use the energy in plants, they produce **carbon dioxide**, which is a resource that plants need.

Organisms that live in marine ecosystems are adapted to live in **salt water**. Any body of water that is more than 1% salt is considered salt water. In addition to the ocean, this includes some inland salt lakes. Water that is less than 1% salt is classified as fresh water.

All ocean marine ecosystems are interconnected because all oceans are connected. Ocean ecosystems do vary from place to place. The differences depend mostly on temperature and depth. Marine ecosystems cover much more area and have much more volume than freshwater ecosystems. Oceans cover 71% of Earth's surface and contain 97% of Earth's water.

Where Are Aquatic Ecosystems?

1. Circle the word **TRUE** if the statement is TRUE or Circle the word **FALSE** if it is FALSE.

- a) Lentic refers to ecosystems in still water.
TRUE FALSE
- b) Lotic refers to ecosystems in moving water.
TRUE FALSE
- c) Oceans can contain either fresh water or salt water.
TRUE FALSE
- d) Algae are consumers.
TRUE FALSE
- e) Fish are consumers.
TRUE FALSE

2. Use the words or groups of words in the list to complete each sentence. Use each word only once. Some words will not be used.

lentic oxygen carbon dioxide lotic
photosynthesis fresh salt consumers

- a) Rivers are _____ ecosystems.
- b) Crayfish are _____.
- c) _____ is one of the products of _____.
- d) The Great Lakes contain _____ water.
- e) If a small puddle of fresh water contains organisms, it is a _____ ecosystem.

Where Are Aquatic Ecosystems?

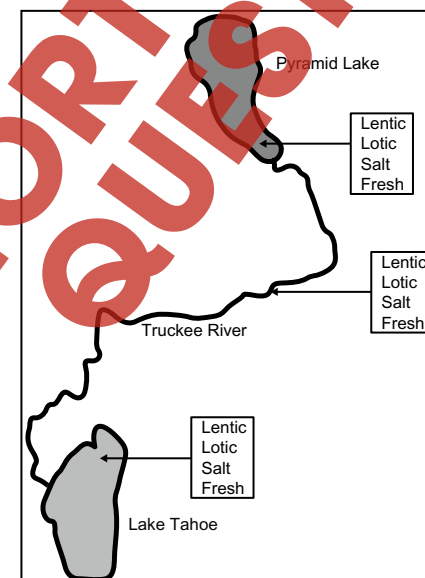
3. Answer the questions in complete sentences.

- a) Explain why all ocean ecosystems are interconnected.

- b) Identify two producers and three consumers in a freshwater lake ecosystem.
Producers: _____
Consumers: _____

Extensions & Applications

Rough Draft Worksheet



The map shows three bodies of water: Lake Tahoe, Pyramid Lake, and the Truckee River. The Truckee River begins at Lake Tahoe and ends at Pyramid Lake. Show the characteristics of each body of water by circling two words in each box.

See page 13 for Final Version Worksheet.



Activity Two

Visit an Aquarium

Learn about aquatic ecosystems at a public aquarium. The tanks filled with aquatic life in an aquarium are not the same as a wild aquatic ecosystem, but they have some similarities. The advantage an aquarium has over a wild ecosystem is that you will probably be able to find someone to answer your questions. Be sure to take a written list of questions with you. When you visit, you may want to walk around and enjoy the exhibits first.

You may be able to get a guide booklet at the entrance that will answer some of your questions. Most aquariums also have information posted next to each tank. Now look at your list and mark any of your questions that are still unanswered. Try to find someone on the aquarium staff, like a docent or a guide, who would like to give you more information.

Here are some suggested questions. Feel free to add your own questions to the list.

1. Which tanks have salt water and which have fresh water?
2. Which exhibits are most like a wild ecosystem?
3. Do all the consumers have to be given food, or do some tanks have their own producers?
4. Do any predators have their prey in the tank?
5. Is all the oxygen supplied by plants?
6. Are any of the animals extinct in the wild?

NAME: _____



Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

- | | | | | |
|-----------|----------------|----------------|----------------|--------------|
| abiotic | biotic | fresh (water) | nurdles | salt (water) |
| acid rain | carbon dioxide | greenhouse gas | overfishing | spawn |
| adapt | debris | invertebrates | oxygen | system |
| algae | estuary | lotic | photosynthesis | vertebrates |
| aquatic | fish (ladder) | marine | runoff | |

A	V	E	R	T	E	B	R	A	T	E	S	A	B	C
I	Q	S	I	H	A	N	S	G	A	F	E	S	S	D
N	K	U	A	D	E	L	E	G	L	O	T	I	C	M
V	T	S	A	G	R	Q	L	F	P	O	S	R	N	O
E	U	P	Y	T	E	A	D	C	I	E	Y	B	N	V
R	T	X	V	W	L	S	R	I	H	S	X	E	I	E
T	O	D	C	B	A	C	U	T	W	Z	H	D	A	R
E	D	I	X	O	L	D	N	O	B	R	A	C	R	F
B	E	M	E	T	S	Y	S	I	H	F	O	G	D	I
R	M	L	O	K	S	P	M	B	J	N	I	H	I	S
A	N	O	O	A	A	P	A	S	Q	E	R	C	H	
T	B	W	T	W	R	V	L	H	U	T	S	E	A	I
E	X	O	N	I	Y	Z	M	T	W	X	Y	Z	R	N
S	H	D	N	C	B	E	S	T	U	A	R	Y	A	G
P	E	E	F	G	R	U	N	O	F	F	R	E	S	H

NAME: _____



Part C

Comprehension Quiz

Answer each question in complete sentences.

1. Explain why an ecosystem is a system. 3

2. Explain how oxygen (O₂) and carbon dioxide (CO₂) are exchanged between plants and animals in an ecosystem. 3


3. Explain how burning fossil fuels has caused ocean temperature to rise. 3

4. Why does an increase in the amount of dissolved carbon dioxide in the ocean endanger coral reefs? 3

5. Describe **one** thing individuals can do to help protect aquatic ecosystems. 3

SUBTOTAL: /15

Invasive Aquatic Species to North America

	Sea Lamprey		Round Goby
	Water Hyacinth		Purple Loosestrife
	Zebra Mussels		Asian Carp

NAME: _____

After You Read 



Where Are Aquatic Ecosystems?

3. Answer the questions in complete sentences.

a) Explain why all ocean ecosystems are interconnected.

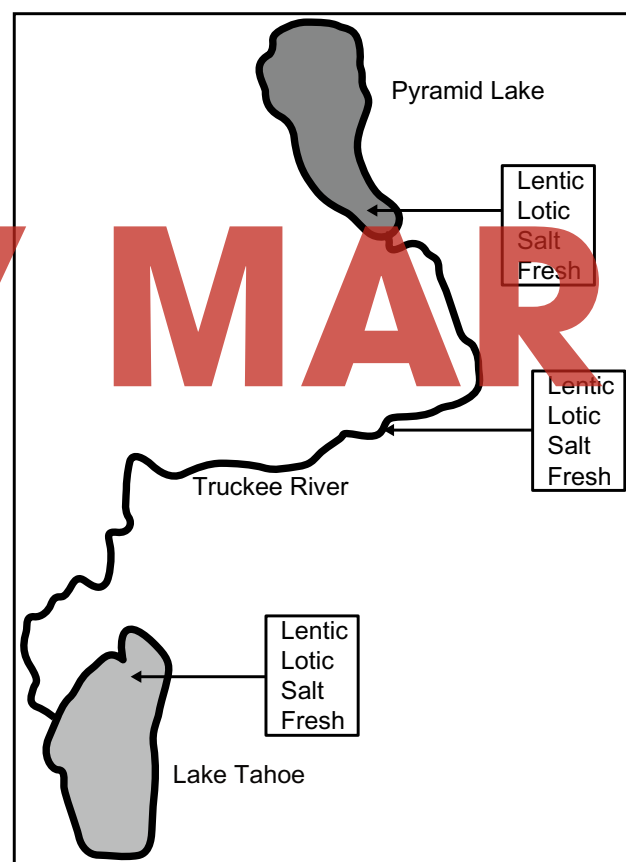
b) Identify two producers and three consumers in a freshwater lake ecosystem.

Producers: _____

Consumers: _____

Extensions & Applications

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3.

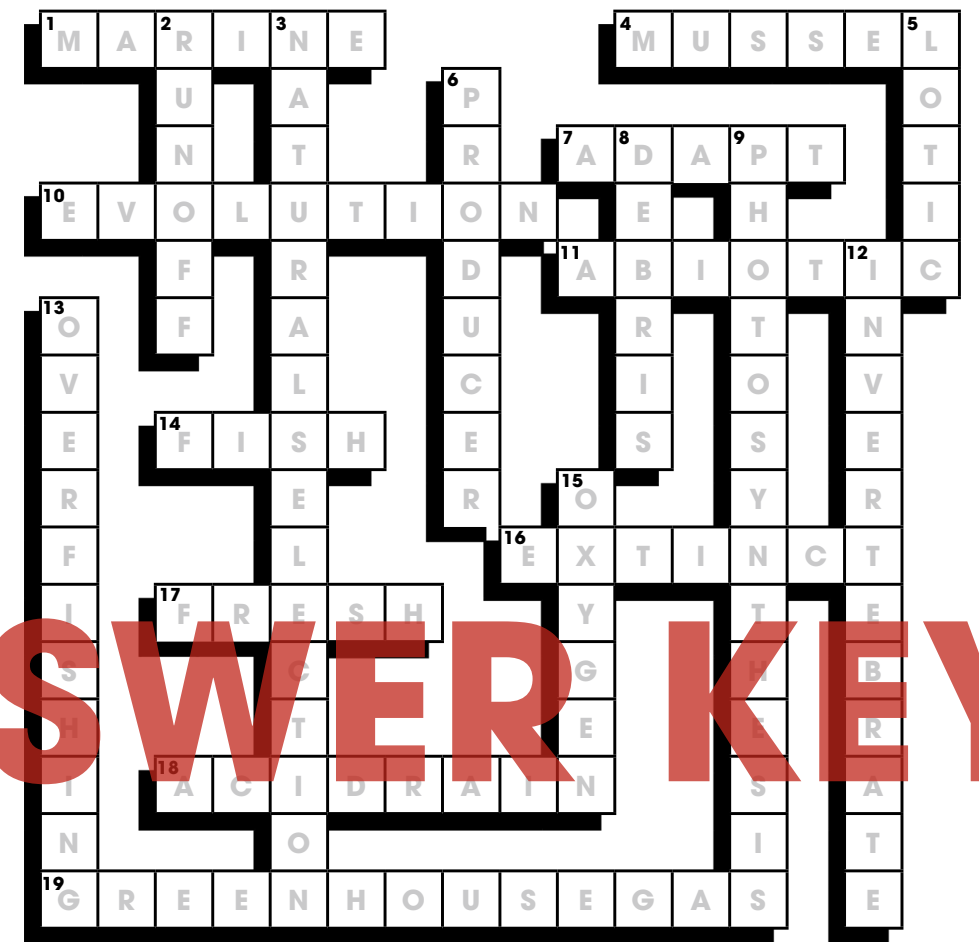
a) All oceans are connected.

b) (Producers) "algae, water plants"
(Consumers)
Any three of the following. (Answers will vary): fish, frogs, insects, crayfish, amphibians, reptiles, etc.

Extensions & Applications

Lake Tahoe: lentic, fresh
Truckee River: lotic, fresh
Pyramid Lake: lentic, salt

Crossword Puzzle!



EASY MARKING ANSWER KEY